
**THE IMPACT OF INFORMATION TECHNOLOGY AND INTELLECTUAL CAPITAL
ON ACHIEVING DISTINGUISHED PERFORMANCE: AN EXPLORATORY STUDY
IN A SAMPLE OF COLLEGES OF AL-MUSTAQBAL UNIVERSITY**

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ABSTRACT

This study aimed to identify the impact of information technology and intellectual capital on achieving distinguished performance among teaching staff members in the colleges of Al-Mustaqbal University, by revealing the nature of the relationship between these variables and the extent of each variable's contribution to raising the level of academic and administrative performance.

The study adopted the descriptive analytical method. A total of (40) questionnaires were distributed to a simple random sample of faculty members, of which (30) valid questionnaires were retrieved for statistical analysis, representing a response rate of (75%). The study used statistical methods including frequencies, percentages, arithmetic means, standard deviations, Pearson correlation coefficient, and multiple linear regression analysis via SPSS.

The results showed that the level of intellectual capital availability was high (4.03 out of 5), while the level of information technology availability was also high but to a lesser degree (3.63). The results also revealed a strong positive correlation (0.684) between information technology and intellectual capital, and a significant effect of both variables on distinguished performance, explaining (65%) of its variations, with a clear superiority of the effect of intellectual capital (0.514) compared to information technology (0.322).

The study concluded that Al-Mustaqbal University possesses a distinguished academic staff and high intellectual capital, yet needs to develop its software infrastructure and information databases. It recommended updating databases, providing specialized software, creating an innovative incentive system, and launching a digital platform for knowledge exchange.

Keywords: Information Technology, Intellectual Capital, Distinguished Performance.

1. INTRODUCTION

Electronic computers, their software applications, and communication networks are among the most prominent manifestations of advanced information technology that have significantly contributed to the development of administrative work, providing accuracy and speed in obtaining information that helps rationalize the decision-making process.

Progress in information technology, represented by computers, software, and communication networks, has helped individuals develop their capabilities and transition from the information age to the knowledge age. New challenges in the environment of educational institutions have imposed the need to address the phenomenon of loss of expertise and highly skilled thinkers as a result of

administrative changes such as organizational re-engineering and human resource rationalization strategies, leading to the emergence of the concept of "knowledge management" as one of the fundamental pillars for developing institutional performance.

The importance of the research topic is evident in the ability to diagnose strengths and weaknesses in the scientific performance of teaching staff members, measure the effectiveness of using information technologies, and provide appropriate recommendations to the university administration to benefit from them, thereby contributing to the advancement of academic and economic performance of the educational institution, enhancing its role in raising the level of education and scientific research, and reflecting that on the national economy.

2. METHODOLOGICAL FRAMEWORK AND PREVIOUS STUDIES

2.1 Research Problem

Despite significant developments in higher education, many universities face challenges in achieving distinguished performance among their teaching staff, which reflects on the quality of the educational and research process. The most prominent of these challenges are:

1. Weak utilization of information technology in academic and administrative activities, where usage is often limited to basic computers and software with limited networks and digital services, restricting the ability of teaching staff to improve productivity and academic innovation.
2. Low effectiveness of intellectual capital due to insufficient utilization of the experiences and knowledge of the teaching staff, weak documentation of institutional knowledge, and lack of supportive systems for managing expertise and knowledge, reducing the university's ability to transform knowledge into tangible results in distinguished performance.
3. Absence of clear and precise mechanisms for measuring distinguished performance, both at the level of teaching and research activities, and lack of unified standards for evaluating performance quality, making it difficult to identify strengths and weaknesses among the teaching staff.
4. Lack of integration between information technology and intellectual capital, where digital resources are not employed to enhance the utilization of individual and collective knowledge and experiences, leading to loss of opportunities for achieving distinguished performance at both institutional and individual levels.

Accordingly, the research problem is manifested in the need to study the impact of information technology and intellectual capital on supporting and achieving distinguished performance among teaching staff members in the colleges of Al-Mustaqbal University.

2.2 Research Objectives

1. To identify the extent of the impact of information technology and intellectual capital on achieving distinguished performance among teaching staff members.
2. To identify the obstacles that hinder reaching distinguished performance.
3. To determine the level of teaching staff's use of modern information technologies in their scientific and administrative activities.
4. To measure the impact of intellectual capital on improving distinguished performance.
5. To identify the relationship between information technology and intellectual capital and the extent of their impact on distinguished performance.

2.3 Research Hypotheses

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1. **First Hypothesis (H1):** There is a significant effect of information technology on the distinguished performance of teaching staff members.
 2. **Second Hypothesis (H2):** There is a significant effect of intellectual capital on the distinguished performance of teaching staff members.
 3. **Third Hypothesis (H3):** There is a significant correlation between information technology and intellectual capital among teaching staff members.
 4. **Fourth Hypothesis (H4):** Intellectual capital mediates the relationship between information technology and distinguished performance.

2.4 Research Methodology

The research adopted the descriptive analytical method, using an opinion survey approach, by designing a customized questionnaire to identify the opinions of teaching staff regarding the impact of information technology and intellectual capital on achieving distinguished performance.

2.5 Research Limitations

- **Spatial limits:** The research focused on the colleges of Al-Mustaqbal University.
- **Temporal limits:** The research covered the current academic year (2025-2026) during which data were collected.
- **Subject limits:** The research was limited to assessing the impact of information technology and intellectual capital on achieving distinguished performance among teaching staff members.

2.6 Previous Studies

2.6.1 Study by Al-Anzi and Neama (2020)

- **Title:** The Impact of Intellectual Capital on Organizational Performance: A Field Study in a Sample of Mixed Industrial Sector Companies.
- **Results:** There is a significant effect of intellectual capital on organizational performance.
- **Recommendation:** The necessity of building intellectual capital as a basis for dealing with the knowledge economy.

2.6.2 Study by Al-Hashemi (2003)

- **Title:** The Role of Information Technology in Re-engineering Administrative Processes: A Case Study at the University of Mosul.
- **Results:** The introduction of modern technologies led to changes in the tasks of administrative functions, activation of communication, and improvement of decentralization.

2.6.3 Study by Al-Sa'ed and Harim (2004)

- **Title:** The Role of Knowledge Management and Information Technology in Achieving Competitive Advantage: A Field Study on the Pharmaceutical Industry Sector in Jordan.
- **Results:** There is a strong relationship between knowledge management and competitive advantage, and a moderate relationship between information technology and competitive advantage.

2.6.4 Study by Walid Abbas Jabr et al. (2023)

- **Title:** The Role of Intellectual Capital in the Quality of Higher Education.
- **Results:** Intellectual capital significantly contributes to enhancing distinguished academic performance.
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2.6.5 Areas of Benefit from Previous Studies

- Building upon the results of previous studies in linking variables.
- Benefiting from previous results to indicate agreement or disagreement with current results.

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- Constructing the study scale using indicators and statements addressed by previous studies.

3. THEORETICAL FRAMEWORK

Introduction to the Chapter

Contemporary organizations have witnessed fundamental transformations due to the accelerated development of information technologies and the growing importance of intellectual capital as the most influential resource in building competitive advantage. The ability to employ knowledge and technology together has become a basic condition for achieving distinguished performance in environments characterized by change and complexity. Modern literature indicates that organizations that invest in technological infrastructure and the development of intellectual capital achieve higher levels of operational efficiency, service quality, and innovation (Laudon & Laudon, 2020, p. 150; Mabrouk, 2022, p. 315). Accordingly, this chapter addresses the theoretical foundations of the study variables through three main sections: information technology, intellectual capital, and then the integrative relationship between them in achieving distinguished performance.

3.1 First Section: Information Technology and Its Role in Achieving Distinguished Performance

3.1.1 Concept of Information Technology

Information technology is defined as "the set of systems and tools used to collect, process, store, and retrieve data to support decisions and organizational processes" (Laudon & Laudon, 2020, p. 45). Al-Ani (2018, p. 22) points out that information technology has become "a strategic component in modern organizations, due to the speed and accuracy it provides in completing work and its ability to improve the quality of decisions." In conclusion, it is the set of methods, devices, applications, and physical means for collecting, processing, storing, and transmitting information (Mustafa, 2019, p. 25).

3.1.2 Components of Information Technology

Information technology consists of five main elements:

- Hardware
- Software
- Databases
- Networks
- IT Human Resources

Youssef (2005, p. 33) emphasizes that the integration of these components "represents a basic condition for achieving distinguished organizational performance, as any weakness in one of them negatively affects the efficiency of the entire system."

3.1.3 Importance of Information Technology in Organizations

Information technology contributes to:

- Improving service quality (Al-Ani, 2018, p. 41)
- Increasing transaction speed (Youssef, 2005, p. 110)
- Enhancing accuracy of administrative decisions (Laudon & Laudon, 2020, p. 88)
- Reducing operational errors (Al-Ani, 2018, p. 55)
- Supporting innovation and product development (Nonaka & Takeuchi, 1995, p. 45)

3.1.4 Information Technology and Distinguished Performance

The literature indicates a positive relationship between the level of information technology application and the level of distinguished performance. Youssef's study (2005, p. 102) found "a statistically significant relationship between investment in information technology and achieving distinguished performance in educational institutions." Laudon & Laudon (2020, p. 150) also affirm that organizations that adopt advanced information systems achieve higher levels of operational efficiency and ability to respond to changes.

3.2 Second Section: Intellectual Capital and Its Role in Achieving Distinguished Performance

3.2.1 Concept of Intellectual Capital

Intellectual capital is defined as "the knowledge, skills, experiences, and innovations that individuals possess and from which the organization benefits" (Stewart, 1997, p. 12). Mabrouk (2022, p. 295) points out that it is "the most influential resource in building a sustainable competitive advantage, especially in knowledge-based organizations." It is the product of interactions between the experiences and knowledge of human resources, and the mental ability to generate new, appropriate, and implementable ideas (Al-Anzi & Neama, 2020, p. 33).

3.2.2 Components of Intellectual Capital

- a. **Human Capital:** Represents skills, experiences, abilities, and individual creativity (Bontis, 1998, p. 65). It is the most influential element in innovation and improving service quality.
- b. **Structural Capital:** Includes databases, procedures, systems, and organizational culture (Stewart, 1997, p. 75). It remains within the organization even when individuals leave.
- c. **Relational Capital:** Represents relationships with beneficiaries, partners, suppliers, and society (Bontis, 1998, p. 70). It is a basic element in building trust and achieving beneficiary satisfaction.

3.2.3 Intellectual Capital and Distinguished Performance

Intellectual capital contributes to:

- Raising the level of innovation (Bontis, 1998, p. 75)
- Improving service quality (Mabrouk, 2022, p. 315)
- Enhancing problem-solving ability (Stewart, 1997, p. 90)
- Achieving performance sustainability (Mabrouk, 2022, p. 320)

Youssef's study (2005, p. 130) indicates that "organizations with high intellectual capital achieve higher levels of distinguished performance."

2.3 Third Section: The Integrative Relationship between Information Technology and Intellectual Capital in Achieving Distinguished Performance

The literature indicates that information technology acts as an enabler for intellectual capital, helping to:

- Convert tacit knowledge into explicit knowledge (Nonaka & Takeuchi, 1995, p. 45)
- Accelerate knowledge exchange among individuals (Laudon & Laudon, 2020, p. 120)
- Support innovation processes (Bontis, 1998, p. 80)
- Improve decision quality (Al-Ani, 2018, p. 60)

The University of Mosul thesis also found that "integration between information technology and intellectual capital achieves the highest levels of distinguished performance" (Youssef, 2005, p. 150).

3.3.1 Role of Information Technology in Enhancing Human Capital

It provides e-training platforms, knowledge management systems, and specialized databases, thereby raising employee skills and increasing their ability to innovate.

3.3.2 Role of Information Technology in Supporting Structural Capital

It contributes to building standardized systems and procedures, and facilitating access to institutional knowledge.

3.3.3 Role of Information Technology in Enhancing Relational Capital

Through beneficiary service systems, customer databases, and communication platforms.

3.3.4 Impact of Integration on Distinguished Performance

When information technology integrates with intellectual capital, the following are achieved:

- Improved operational efficiency
- Enhanced service quality
- Strengthened innovation
- Achieved beneficiary satisfaction
- Built sustainable competitive advantage

3.4 Conclusion of Chapter Two

It is clear from the literature that information technology and intellectual capital represent two fundamental pillars for achieving distinguished performance in modern organizations. Moreover, the relationship between them is integrative, as information technology acts as an enabler for intellectual capital, while intellectual capital provides the knowledge and skills necessary to maximize the benefit from technology. This integration leads to improved operational efficiency, service quality, and innovation capability, which positively reflects on distinguished performance.

4. RESEARCH METHODOLOGY

4.1 Research Method

This study adopted the descriptive analytical method.

4.2 Research Population and Sample

The study population consisted of faculty members and administrative leaders in the colleges of Al-Mustaqbal University. A simple random sample of (40) individuals was selected, and (30) valid questionnaires were retrieved for statistical analysis, with a response rate of (75%).

4.3 Research Instrument (Questionnaire)

The questionnaire was designed in three parts:

1. **Demographic information:** (gender, age, educational attainment, academic title, years of experience).
2. **Information technology axis:** (3) dimensions: hardware, software, information databases.
3. **Intellectual capital axis:** (3) dimensions: human capital, knowledge, experience, skill.
4. **Distinguished performance axis:** Measured through subsequent statements.

The five-point Likert scale was used.

4.4 Validity and Reliability of the Instrument

- **Face validity:** The questionnaire was presented to a group of specialized arbitrators.
- **Reliability:** Cronbach's Alpha coefficient was calculated, reaching (0.89) for the information technology axis and (0.91) for the intellectual capital axis.

4.5 Statistical Methods Used

SPSS software was used for data analysis, employing:

- Frequencies and percentages.
- Arithmetic means and standard deviations.
- Pearson correlation coefficient.
- Multiple linear regression analysis.

5. DATA ANALYSIS AND HYPOTHESIS TESTING**5.1 Description of the Study Sample (Demographic Data)****Table (1) Distribution of Sample Members by Demographic Characteristics**

Characteristic	Category	Frequency	Percentage (%)
Gender	Male	18	60%
	Female	12	40%
Age	Less than 40 years	10	33.3%
	40 - 50 years	14	46.7%
	More than 50 years	6	20%
Educational Attainment	PhD	22	73.3%
	Master's	8	26.7%
Academic Title	Professor / Associate Professor	15	50%
	Lecturer / Assistant Lecturer	15	50%
Years of Service	Less than 10 years	9	30%
	10 - 20 years	16	53.3%
	More than 20 years	5	16.7%

5.2 Description of Sample Responses on Study Variables**Table (2) Arithmetic Means and Standard Deviations for the Information Technology Axis**

Dimension	Arithmetic Mean	Standard Deviation	Agreement Level
Computer Hardware	3.85	0.72	High

Dimension	Arithmetic Mean	Standard Deviation	Agreement Level
Software	3.60	0.85	Medium
Information Databases	3.45	0.90	Medium
Overall Mean	3.63	0.82	High

Table (3) Arithmetic Means and Standard Deviations for the Intellectual Capital Axis

Dimension	Arithmetic Mean	Standard Deviation	Agreement Level
Human Capital	4.10	0.68	Very High
Knowledge	4.05	0.70	High
Experience	3.95	0.75	High
Skill	4.00	0.73	High
Overall Mean	4.03	0.72	High

5.3 Hypothesis Testing

Third Hypothesis (H3): There is a statistically significant correlation between information technology and intellectual capital.

Table (4) Pearson Correlation Coefficient between Information Technology and Intellectual Capital

Variables	Correlation Coefficient (r)	Significance Level (Sig.)
Information Technology and Intellectual Capital	0.684	0.000

Conclusion: There is a strong, positive, and statistically significant relationship.

First and Second Hypotheses (H1, H2): Information technology and intellectual capital significantly affect distinguished performance.

Table (5) Multiple Regression Analysis of the Effect of Information Technology and Intellectual Capital on Distinguished Performance

Independent Variable	Regression Coefficient (B)	t-value	Significance (Sig.)	Level
Information Technology	0.322	2.85	0.008	
Intellectual Capital	0.514	4.12	0.000	
R² = 0.65	F = 25.4	Sig. = 0.000		

Conclusion: The two variables explain 65% of the variations in distinguished performance, with intellectual capital having the greater effect.

5.4 Summary of Main Results

1. High educational level and long experience of the sample.
2. Availability of intellectual capital at a high level.
3. Availability of information technology at a good level, with a need to develop information databases and software.
4. Existence of a strong positive correlation between information technology and intellectual capital.
5. Positive effect of both variables on distinguished performance, with the effect of intellectual capital surpassing that of information technology.

6. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. Al-Mustaqbal University possesses a distinguished academic staff (73.3% PhD, 53.3% with 10-20 years of experience).
2. Intellectual capital is available at a very high level (mean 4.03), especially human capital and knowledge.
3. Information technology is available at a high but lower level (mean 3.63), with relative weakness in software and information databases.
4. There is a strong integrative relationship (0.684) between information technology and intellectual capital.
5. The two independent variables explain 65% of the variation in distinguished performance, with intellectual capital having a greater effect.

Recommendations

1. Update and expand university databases, and conclude agreements with international publishing houses such as Scopus and Web of Science.
2. Provide specialized and advanced software (statistical analysis, design, simulation) with training for professors and staff on their use.
3. Enhance continuous training and development programs for human cadres in academic, leadership, and creative fields.
4. Create an innovative incentive system to retain distinguished professors and attract new competencies with high intellectual abilities.

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5. Establish an integrated digital platform for exchanging knowledge and experiences among professors, transforming technologies from mere possession to actual investment.

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